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Capacity Building for Smallholders

Experiences from a field study in Malawi

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Acronyms and Abbreviations

ACBF	African Capacity Building Foundation
AIDS	Acquired Immunodeficiency Syndrome
EPA	Extension Planning Area
FAO	Food and Agriculture Organization of the United Nations
FUM	Farmers Union of Malawi
GNI	Gross National Income
GSL	Group Savings and Loans
HDI	Human Development Index
HH	Household
HIV	Human Immunodeficiency Virus
IITA	International Institute of Tropical Agriculture
IMF	International Monetary Fund
MDGs	Millennium Development Goals
MIRACLE	Making Agricultural Innovations Work for Smallholder Farmers Affected by HIV/AIDS in Southern Africa
MLBP	Malawi Lake Basin Programme
MUSCCO	Malawi Union of Savings and Credit Cooperatives
NASFAM	National Smallholder Farmers' Association of Malawi
NGOs	Non-Governmental Organizations
SACMEQ	Southern African Consortium for Monitoring Educational Quality
SIDA	Swedish International Development Cooperation Agency
UN DESA	United Nations Department of Economic and Social Affairs

UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
WHO	World Health Organization

Abstract

Agriculture is the livelihood for the majority of the world's rural population and development in the sector is thus highly relevant in order to reduce poverty for a great share of the poorest. In this paper the aim is to investigate how capacity building activities can improve smallholders' life situation. Through a field study in Malawi we find that positive effects exist in both the short and the long term. The capacity building activities increase the farmers' productivity and income which implies higher welfare in terms of health and education. Higher human capital can in the long run bring greater economic growth.

Keywords: capacity building, smallholders, Malawi, human capital, agricultural development, economic growth

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1 Introduction

In September 2000, one of the world's most extensive efforts in fighting poverty was established when 189 nations signed the United Nations Millennium Declaration. This commitment implied working towards eight different goals, known as the Millennium Development Goals (MDGs) within the fields of poverty, hunger, education, equality, health, environment as well as aid and trade (UNICEF 2012). Fewer than 1000 days now remain and unfortunately the prospects are dark in achieving all aims in some regions. A lot of people still struggle with extreme poverty and have a long way to go. Many of these live in rural areas where agriculture is the main livelihood and therefore development in the farming sector is essential to improve the living standards for the most disadvantaged.

With this study we have the aim of investigating how capacity building activities for smallholders can contribute to development among the poorest**.** Weighing the scope of the subject against the limits of our thesis, we focus on the effects on health and education derived from farmer capacity building at individual and group level.

Our data is collected in Malawi, one of the ten poorest countries in the world. It is an agriculturally dependent economy with the major part of its population in rural regions struggling with a bad health situation and low educational outcomes. These circumstances motivate why we choose to narrow the research and data collection to this country.

The research questions that we want to answer are;

- What welfare effects, in terms of health and education, can smallholders in Malawi achieve through capacity building activities?
- What long-term effects in economic growth can be reached through capacity building activities for smallholders in poor areas?

Our paper examines capacity building at household level and brings an indication of the effects that the target people experience. By the qualitative method used, it contributes with a deeper understanding of the people's situation when a quantitative method is not suitable, see section 3.1 for further discussions. The result implies that these types of activities are beneficial for economic growth and should therefore be of interest for policymakers.

This paper is structured in seven different chapters and the disposition is as follows. Chapter one is an introduction with the aim and scope of the thesis. The second chapter gives a wide background of the components in the study; an overview of Malawi, different attributes of the

agriculture sector, economic growth from agricultural development, the concept of capacity building and how smallholders can gain welfare from these activities. The following chapter describes the methodology used, how the data is collected and why a quantitative method is not suitable. Chapter four presents thematically the results from the interviews and combines it with discussions from the literature. The subsequent chapter contains a conclusion about the findings and after that a list of references is provided. Finally an appendix gives an overview of the interview questions.

2 Background

In this section we will first give an introduction to Malawi and the current state of its health and educational sector, along with its agriculture. The following section is an attempt to depict different attributes of agriculture in general and its role in the development context and economic growth. The part about capacity building activities provides an understanding of the concept and examples of previous work within the field. Welfare in terms of health and education is discussed in the last section, together with human capital and its influence on economic growth.

2.1 Malawi

The Republic of Malawi, a small landlocked country in Sub-Saharan Africa, had in 2012 a population of 15.91 million people and a gross national income (GNI) per capita of 320 US dollars (The World Bank 2013a). The country is one of the poorest and least developed in the world (FAO 2013). The Human Development Report 2013 declares that the country has a human development index (HDI) of 0.418 and the development ranking 170 of 186, which is an improvement by one position since 2011 (UNDP 2013a, p. 150). According to the World Bank, as much as 63 percent of the population were living on less than 2 US dollars per day in 2010 (The World Bank 2010, p.4).

Many different and complex factors contribute to the extensive poverty in Malawi and one of the most profound and widespread problems is the health situation. HIV/AIDS has a prevalence rate of 10 percent among adults between 15 and 49 in 2011 (WHO 2013). Other illnesses such as malaria, anemia, tuberculosis and diarrheal diseases are widespread in the population. Deficiency of material and lack of educated labor in a major part of the health facilities throughout the country complicates the situation further. Public health care is usually free but offers lower quality than the charged private alternative. Malnutrition is a major problem and causes stunting among many children in Malawi. As much as 50 percent of child mortality under five is related to malnutrition (Conroy, Blackie, Whiteside, Malewezi & Sachs 2006, p.39).

Another poorly performing sector in the country is the education system. Primary education is free since 1994 but still the completion rate is not more than 35 percent (The World Bank 2010, p.12). The tough economic situation for young people together with domestic responsibilities, marriages at a low age, pregnancies and other social behavior can partly explain the low demand for schooling. In some cases, the village cannot supply education up to the last year of primary school, which obviously affects the educational situation. According to the Southern African

Consortium for Monitoring Educational Quality (SACMEQ), Malawian primary school delivers a low quality level when looking at scores in national examinations (The World Bank 2010).

The agricultural sector in Malawi involves as much as 85 percent of the population and the main part is practicing it as a livelihood (FAO 2013). Tobacco is the largest and most important export crop but tea, sugar and coffee are also exported. The predominant majority of the population has a small farming area and traditionally cultivate the land by hand tools (FAO 2013), still 84 percent of all farm output come from smallholders (Sachs et al. 2006, p.24). Together with cassava and sweet potato, maize is the most prevalent food crop and tobacco, paprika, groundnuts and cotton are the most important cash crops. However, cash crops are not that common and only grown by one-third of the smallholder farmers. Maize is the primary crop in 90 percent of the total farming area and the main source of food for the Malawians (Sachs et al. 2006, p. 87). In fact, as much as 80 percent of the calories consumed per day come from maize (Sachs et al. 2006, p. 87). Soil exhaustion caused by the same type of crop being grown repeatedly in an area without periods of fallow is frequently occurring. The season for growing is often short and volatile due to tough climate conditions and a short rain period. This, together with small farming areas, makes smallholding in Malawi very vulnerable (Sachs et al. 2006).

2.2 Economic Growth through Agricultural Development

Development in rural areas is almost always connected to agricultural development and therefore it is important to understand the attributes that agriculture comprises. Agriculture can be seen as only an industry among others but at the same time it has several disparities. The sector employs far more people than any other industry in low developed countries. When countries become more advanced, the share of the population in the agricultural sector declines. The sector engages 60-70 percent or more of the total labor force in the least developed countries, but in more developed countries less than 10 percent of the labor force can be found here (Perkins, Radelet & Lindauer 2006, p. 607).

Farming has a long-standing history not comparable to any other sector. It has been the primary way of living since we abandoned the hunting and gathering society thousands of years ago. Due to this, the practice is often very tradition-bound and in some parts of the world, the same methods as during pre-industrial time are still used. In these environments, habits and approaches that strengthen traditional ways of living are often developed and changes are not easily made. The principle of learning by seeing, here spreading new crops and farming techniques by visibly showing the good results, is often successful in these settings. Due to the high risk that the

farmers are facing when changing techniques, they often need to be convinced of the benefits of the new methods before they implement them (Perkins, Radelet & Lindauer 2006).

Another specific attribute is the great dependence of land and climate conditions that goes beyond any other type of industry, since this constitutes the core of the business. The type of landscape available determines the usage of the land and what techniques can be practiced. Climate conditions and weather changes, quality of soil and availability of water also play an important role and can often lead to unpredictable situations for the farmer. Land and climate are both matters of local conditions, and techniques that are being used in one place are not necessarily useful everywhere. Other industries can often apply the same techniques and methods within the whole country but in the agricultural sector extreme variations can exist even at local level (Perkins, Radelet & Lindauer 2006).

History tells us that agricultural development is essential for further and wider growth in the economy. It is stated by many that a Green Revolution took place before, or in symbiosis with, the Industrial Revolution in Europe and Japan (Allen 1994, Bairoch 1973, Crafts 1985, Lipton 1977, Ohkawa & Rosovsky 1964, Overton 1996, Rostow 1960 see Bezemer & Headey 2008). A more contemporary economic upswing in Taiwan and South Korea also shows the dependence of a strongly developed agricultural sector prior to becoming a more advanced economy (Kang & Ramachandran 1999, Wade 1990 see Bezemer & Headey 2008). Farming is a livelihood for 86 percent of the people in the world's rural areas and over 80 percent of the poverty reduction in these regions is due to an improved rural situation rather than migration to cities (The World Bank 2007, p. 3). Despite this, in Sub-Saharan Africa and South Asia the number of rural poor is growing and this increase is expected to surpass the urban counterpart by 2040 (The World Bank 2007).

In developing countries, improvement in the agricultural sector is often the core to economic growth due to the fact that such a great share of the population is living on farming (Perkins, Radelet & Lindauer 2006). The characteristics of agriculture to be labor-intensive and require low-skilled employment are reasons to why it is a vital player in economic development (Bezemer & Headey 2008). Farmers do not only need to produce sufficient food for themselves. They also need to produce enough food for the urban population. As migration to urban areas increases, the agricultural productivity needs to be improved further in order to satisfy the quantity of food demanded (Perkins, Radelet & Lindauer 2006).

2.3 Capacity Building Activities

The application of capacity building has evolved during the last 30 years and is today frequently appearing in development policies by donor agencies (Whyte 2004). Capacity building is a concept with a broad definition and is often expressed differently among agencies. The UNDP defines capacity building as

> The process by which individuals, groups, organizations, institutions and societies increase their abilities to: 1) perform core functions, solve problems, and define and achieve objectives; and 2) understand and deal with their development needs in a broad context and in a sustainable manner.
>
> UNDP (2002, p. 68)

As indicated above, capacity building can occur at different levels and in several areas, but since we focus on smallholders, emphasis is on individuals and groups in this paper. In Malawi, as well as in Africa in general, there are many active development projects within this field. In association with the international aid establishment, African governments in 1991 founded the African Capacity Building Foundation (ACBF) as a way of dealing with the huge deficit in capacity in these countries and of strengthening human capital and institutions in Sub- Saharan Africa. The collaboration consists of 35 African countries, 12 countries outside Africa and 4 international organizations; the World Bank, the African Development Bank, UNDP and IMF. In the East region, 3 out of 12 projects operate in Malawi (ACBF 2013).

The benefits of capacity building are documented and there are several examples of poverty having decreased and human welfare having improved. One example is effects of capacity building within projects for irrigation systems in Kenya. According to Mati (2008), these projects generated higher income and increased food security from improved harvest. This could be achieved thanks to new equipment but also to training for farmers in crop and water management, marketing and group collaboration. The activities were performed by governmental extension staff, NGOs and the private sector, and took the form of field days, meetings, farmer-to-farmer learning and exchange visits. Mati (2008) also declares that the capacity development was essential for the achieved welfare improvements. Another kind of proof of the effectiveness of capacity building is shown in the article by Peacock, Ahuya, Ojango and Okeyo (2011). They state that a goat improvement program in Kenya led to higher income for the farmers from the selling of milk and greater stock of breeding and of slaughtering goats. Food security increased thanks to the better possibilities of consuming milk and of obtaining a greater harvest due to the use of goat manure. These effects came from different capacity building activities on individual

level such as workshops, training programs and discussions (Peacock, Ahuya, Ojango & Okeyo 2011).

2.4 Development and Welfare

Four of the eight MDGs are directly related to health and education. This says a lot about the importance of these dimensions in development context and poverty reduction. To measure human development the UNDP created in 1990 the Human Development Index (HDI), composed of health, education and living standard aspects (Perkins, Radelet & Lindauer 2006; UNDP 2013b).

2.4.1 Health

The World Health Organization declares that "health is a state of complete mental, physical, and social wellbeing and not merely the absence of disease" (WHO 2003). Difficulties in measuring health from this definition imply that it is easier to use indicators where health is weak or absent like morbidity and mortality. One of the most common measures of a nation's health is life expectancy that is calculated from statistics of deaths (Perkins, Radelet & Lindauer 2006).

During centuries, health has steadily improved worldwide and life expectancy has increased greatly since the end of the 20th century, especially within low developed countries. This development has occurred even when economic growth has been slow, for instance in South Asia 1960 to 1990. Unfortunately life expectancy is not always increasing; Sub-Saharan Africa did experience a decline due to the HIV/AIDS epidemic in the 90's. In some parts, the impact was as much as 20 years' loss in life expectancy (Perkins, Radelet & Lindauer 2006).

Income and health are correlated and higher income often leads to enhanced nutrition, better housing and access to more and better health care, which thus lead to improved health. Long before advancement in health took place, all parts of the world struggled with pestilence, malnutrition and famine. In the West these conditions have been erased but for many developing countries they are still present. Health problems are often related to environmental circumstances with poor drinking water, sanitation and housing. When the surroundings are inadequate, vicious circles can easily emerge and an already poor state of health can get even worse (Perkins, Radelet & Lindauer 2006).

2.4.2 Education

The view of education as essential for development is not a modern phenomenon. Since the middle of the 70's there has been a positive trend in more schooling in all parts of the world. Both enrolment rates and average years of schooling have increased worldwide and significantly

in developing countries. Yet, education is not always the same as schooling, when schools provide low quality in education. Education is the goal of schooling and is achieved when students actually have acquired skills and knowledge (Perkins, Radelet & Lindauer 2006).

Education can be seen as an investment that has a present cost and a future return. Direct costs can be school fees, materials, transports and school uniforms. In developing countries, the opportunity cost of school attendance is of great matter and can consist of loss in domestic work, ranging from taking care of family members to harvesting crops. These aspects can make parents unwilling to invest in education for their children, when they are not sure of the future gains and experience high costs (Perkins, Radelet & Lindauer 2006).

There is a magnitude of literature affirming the benefits of education. More years of schooling lead to higher wages in future employment, defined as the private return to education. This positive relationship holds in both developed and developing countries, high and low levels of income and for both men and women (Perkins, Radelet & Lindauer 2006). Due to the basic skills accumulated in the first years of schooling, such as reading and writing, the rate of return is higher during this period in comparison with later years (Weil 2013).

Not only does the individual herself receive benefits from education, but also other members of the society (Weil 2013). Examples of positive externalities from education can be lower crime rate, better health that lowers the risk of transmitting diseases, better political awareness and decision-making (Perkins, Radelet & Lindauer 2006). New technologies invented by educated individuals that later can be copied by less-educated are important externalities relevant in developing countries. The presence of these social returns to schooling is an argument for governments to promote education (Weil 2013). Nevertheless, it is necessary to have expenditures today in order to receive these future benefits. Costs paid by the society are everything from teacher wages to school buildings and equipment, and governments have to decide how to allocate resources among all sectors in the economy efficiently (Perkins, Radelet & Lindauer 2006).

2.4.3 Human Capital and Endogenous Growth

Good health and education are something that most people want to achieve and are considered as valuable goals on their own. Economic growth has a causal relationship with human development when the government allocates its incomes on activities to improve health and education. However, this is not the only way to look at it. Health and education can also be seen as a means to improve development and economic growth (Ranis, Stewart & Ramirez 2000).

The role of human capital for growth has been known for a long time. Boccanfuso, Savard and Savy (2013) state that even Adam Smith in his work *The Wealth of Nations* (1776) discussed education and its impact on productivity and wages. Examples from modern times include Schultz 1961 and Becker 1964 among others who again stressed the significance of labor quality and shaped the human capital theory. The latter believed that rational individuals make choices about their amount of education to maximize future wages. Lucas in 1988 examined growth rate differences between countries and explained them by education. The positive relationship between human capital and economic growth was questioned at the end of the 90's and the beginning of the 00's, but was once again proved when the quality of education together with diminishing returns to education was considered (Boccanfuso, Savard & Savy 2013). These ways to highlight the importance of human capital are included in the endogenous growth theories, where changes in economic growth are explained within the model (Perkins, Radelet & Lindauer 2006).

Investments in health and education are made to enhance the quality of labor, also called human capital (Weil 2013). This can be gained both formally and informally through education and training which both increase labor productivity (Boccanfuso, Savard & Savy 2013). Another characteristic of human capital is that it can be divided into general and specific dimensions. General human capital is gained by education and is useful for any kind of task or work, whereas specific human capital refers to a definite skill that is not transferable to other jobs and gained by particular training. A certain amount of general human capital is often necessary to obtain specific human capital (Perkins, Radelet & Lindauer 2006).

More educated and healthier individuals manage to work longer and more effectively and therefore their productivity increases. Economic growth is reached not only due to a more productive labor force but also because more people can now join the labor force (Weil 2013). One aspect regarding health is that a worker can produce more when his or her family is healthier, by spending more time at work. Also, lifetime earnings and total production increase when life expectancy rises (Perkins, Radelet & Lindauer 2006). The influence of health on production can also be destructive; malaria has for instance had a significant negative impact on economic growth in parts of Africa (Weil 2013).

Health and education are correlated to each other and the relationship goes in both directions. Education can lead to better health in different ways; an example is that better educated mothers tend to have healthier children. With more education it is easier to understand and absorb new information and thereby prevent diseases and unhealthy behavior (Perkins, Radelet & Lindauer

2006). Huang, Fulginiti and Peterson (2010) state the causal effect of health on growth. They find empirical evidence that a decline in life expectancy due to HIV/AIDS leads to lower incentives for education, which results in less economic growth. Thus, health does not only have impact on growth directly but also indirectly through expectations of the future, which in turn affect investments in human capital (Huang, Fulginiti & Peterson 2010).

3 Methodology and Data

3.1 On the choice of qualitative method

To investigate the effects of capacity building activities for smallholder farmers we use a qualitative method of both primary and secondary data collection through interviews, observations and literature studies. The primary data was collected by interviews and observations during a minor field study in Malawi, May to July 2013. Considering the situation of the poor and low developed area with insufficient infrastructure and documented information, we find that performing a field study is relevant and necessary to collect the data needed for answering the issues at hand. Due to the time limit of nine weeks that we had for collecting data and the lack of the respondents' ability of retelling figures of harvest and income, we chose to listen and interpret their stories instead of only looking at data. Because of insufficient resources we had no possibilities to measure effects in health and education ourselves, and the above mentioned time limit is also an argument for not choosing a quantitative method. It would have been interesting to have a regression analysis of different perceived welfare changes by participants belonging to different groups, to see if these effects are statistically significant or not. We considered suitable independent variables as lead versus follower farmer, land rich versus land poor, long versus short period of membership and the dependent variable as the effects in welfare. Nevertheless, from the given answers it is difficult to find adequate variances between these groups and therefore we chose a qualitative focus. Another argument against a quantitative method is the problem with data. No compiled data of the farmers' productivity can be found, and even if there were, we would not have any current data to compare with since we cannot measure the farmers' productivity. The same data problem is valid for health and education information. Further, it would have been suitable to interview farmers that are not involved in any capacity building activities, in order to make for an interesting comparison. This turned out to be impossible due to the fact that capacity building activities are widely spread outside of the programs and it is very challenging to find farmers that do not have any contact with these types of activities. If this had not been a problem, it still would have been hard to get in contact with non-members without any translator who knew smallholders to interview.

Complementary to the primary data, a qualitative literature analysis is used since this method aims at investigating the essential content of the literature (Esaiasson, Giljam, Oscarsson, & Wängnerud 2012). The literature consists of working papers, articles, reports from international and intergovernmental organizations, books, course literature and program documents.

Since we are interested in obtaining thoughts and personal experiences from program participants by dialogue and to reach an in-depth understanding of the effects of capacity building, we believe that the interviewing method is suitable. According to Esaiasson et al. (2012), it is appropriate to apply a respondent survey where the same type of questions are posed to all participants, when the person and his or her thoughts are the most central in the interview, and therefore we use this survey design. A questionnaire survey with open questions is suitable as we want to encourage further conversation. Random sampling is a common strategy for selecting the participants when using this survey method, to be able to generalize the results from the sample to the whole population. Even though random sampling at the individual level would give the most correct depiction of the population, we apply the method at cluster level since this is the only possible option for us in this context. To combine interviews with direct observations is frequently occurring in field studies and relevant when the aim is to investigate things that are difficult for the respondent to verbally retell (Esaiasson et al. 2012). We made observations of the farmers and their environment throughout the field study, which together with the personal interaction from the interviews could give us a greater understanding of the farmers' situation.

3.2 Development Programs in Malawi

During the field study we worked with two development programs; Malawi Lake Basin Programme (MLPB) and Making Agricultural Innovations Work for Smallholder Farmers Affected by HIV/AIDS in Southern Africa (MIRACLE), by which we came in contact with farmers to interview. The programs practice capacity building activities for smallholders, are partly funded by international aid donors and run by international and local organizations.

3.2.1 The Malawi Lake Basin Programme

The MLBP is mainly financed by the Norwegian government and partly by Swedish funds. It has been active since January 2006 and the on-going phase is 2009-2013, which is the one that we refer to in this paper (MLBP 2009).

MLBP is a consortium of five different organizations, three of them Malawian and two of them Swedish. The Malawian organizations are member based and consist of Farmers Union of Malawi (FUM), National Smallholder Farmers' Association of Malawi (NASFAM) and Malawi Union of Savings and Credit Cooperatives (MUSCCO). Vi-Agro Forestry and We Effect (former Swedish Co-operative Centre) are the two Swedish organizations. Together they all contribute with different expertise in the program. The local organizations, FUM, NASFAM and MUSCCO support with practical service, equipment and field workers. FUM contributes with special skills in organizational development, NASFAM provides guidance in business development and

MUSCCO strengthens rural microfinance issues. We Effect is the head organization of the program and has a monitoring role and together with the Royal Norwegian Embassy they coordinate the program. Vi Agro-Forestry offers knowledge in sustainable farming techniques (MLBP 2009).

The general objective of the program is "to improve livelihoods and reduce poverty for the rural poor households in Programme areas by the year 2013 as compared to baseline data" (MLBP 2009, p. 10). In order to achieve this, the program consists of three sub-programs; Organization and Business Development, Agriculture, Fisheries and Adaption to Climate Change and Institutional Development (MLBP 2009). According to the Annual Report 2012, the program outreaches to 27 521 farmers located in Salima and Mangochi districts (Siyabu 2012, p. 12).

To achieve the goal the program applies several capacity building activities within different areas to improve the situation for the households. Examples of activities are visits to Agroforestry centers, adult literacy classes, teaching in conservation agriculture and training in business development skills (Lindgren 2013)[1]. The program supports the creation of various farmer groups, such as clusters, associations and cooperatives (Siyabu 2012). However, the most prominent activity is the creation of farmer clubs and the practice of selecting lead farmers among the approximately 20 members. Information about group dynamics is given in the clubs and lead farmers, and sometimes chairmen and facilitators, are chosen democratically. The lead farmer gets training in different farming techniques directly from the program workers and he or she is supposed to transfer the knowledge to the other club members, so called follower farmers (Lindgren 2013)[1].

Group savings and loans (GSL) is an activity that takes place within the farmer clubs. The members contribute with money that is gathered in a common kitty and from here the farmers can take loans. The small interest from the loans is shared between the members proportionally to their deposits at the end of the year (Lindgren 2013)[1]. A component in the GSL is the so called Social Fund. This fund works as an insurance service and provides loans without any interest for emergency situations such as funerals and severe sickness (MLBP 2009).

In both target areas where the program operates Agroforestry centers have been constructed. They are used to demonstrate how different crops can be cultivated together in an efficient way

[1] Lindgren, Ulf; Country Representative/Program Coordinator MLBP, We Effect. Lilongwe. Meeting 13th May 2013.

and how to apply effective techniques to trap moisture in the soil, known as conservation agriculture. Also the practice of agroforestry, to mix plants and trees, is shown at the center. (Siyabu 2012). During our visit we observed that the centers provide demonstration of how to keep livestock, a developed kitchen with a herb garden, simple irrigation systems and how to grow nutritious and tradable fruits. These centers are also an important place for meetings and discussions where thoughts and knowledge can be exchanged. All lead farmers gather here to get training in new skills and farming techniques. For instance, workshops about price setting for cash crops were hold for lead farmers during one of our visits. At that meeting, about 20 lead farmers were present and a program worker was teaching. The lead farmers were divided into groups working with different tasks that were supposed to be presented at the end of the session. Lead farmers are the first to apply the new techniques that they have seen at the Agroforestry centers. The follower farmers in the clubs can visit the lead farmers' plots, which are located close to their own farm, to observe the new cultivation and farming methods. The lead farmers have the obligation to explain and demonstrate the new practice and by this, knowledge is transferred through the principle of learning by seeing and skills are spread among the farmers.

The program has in 2012 opened a Service center in the Khombedza extension planning area (EPA), where the farmers are offered information and communication services such as the possibility to use computers with Internet, printing facilities and lending of books. The center also provides a warehouse where farmers can store their harvest. Additionally, Talimbika Cooperative has facilities at the center where they produce cooking oil from sunflower and groundnuts (MLBP 2012).

3.2 2 The MIRACLE Project

The second program we came in contact with is Making Agricultural Innovations Work for Smallholder Farmers Affected by HIV/AIDS in Southern Africa, also called the MIRACLE project. The institute maintaining this program is the International Institute of Tropical Agriculture (IITA) that is established in several African countries including Malawi. The institute is engaged in both technological research regarding crop variety development as well as social science to strengthen the farmers' position (Mussagy & Chikoye 2013). The program is partly financed by Swedish funds and operates in Malawi, Mozambique, Swaziland and Zambia since 2011. Several local partners are involved and the main partner is World Vision. The overall goal is "to contribute to sustainable livelihoods of people living with HIV/AIDS in Southern Africa" (Mussagy & Chikoye 2013, p.2). In the 2012 Progress Report, it is stated that the program has directly involved 12 546 Malawian farmers (Mussagy & Chikoye 2013, p. 6).

In order to reach better welfare in the target areas, MIRACLE is working to enhance health, nutritious status, food security as well as the economic situation. This is done through improved crops, better livestock production, rural and health support in addition to improved assistance for the stakeholders (Mussagy & Chikoye 2013). The farmers involved in the MIRACLE project are organized in clubs with selected lead farmers. Group savings and loans are ongoing and demonstration of agricultural techniques is widely used as activities within the program (Kanyika 2013)[2].

3.3 Field Interviews

Through the two development programs mentioned above, 61 interviews were carried out in areas where the programs operate. The reason to why we wanted to look at more than one program was to achieve a wider view of the activities and their impact. From the MLBP we wanted to interview 50 households from ten different clusters belonging to two different EPAs; Tembwe and Khombedza. To obtain a representative sample, clusters were selected through random sampling and the aim was to complete five interviews per cluster. Nevertheless, this was not feasible due to logistical reasons as well as the ability for farmers to take part. Therefore we had to adjust and hence some clusters contributed with more participants than others. When we came to the village, the man with highest influence within the cluster welcomed and introduced us to the farmers he had suggested for the interviews. Often it was difficult to complete exactly five interviews per cluster due to reasons such as harvesting, sickness, funerals or other obstacles for the farmers. This meant that we interviewed those who were available, and it resulted in three to eleven households per cluster, as can be seen in Table 1. Each interview person represents one unique household and among the 61 representatives, 62.3 percent were women. This can be compared to the rate of women participating in the programs, which is 74 percent in the MLBP and 54.8 percent in the MIRACLE project. The rate of females interviewed is representative of the two programs and probably of the country as well, since Malawian women commonly work at the farm (Ngwira (n.d)). Table 1 also shows that just over 20 percent of the people interviewed are lead farmers, which is an overrepresentation as each lead farmer generally has 20 follower farmers (Chipala 2013)[3]. This implies biased answers towards high participation rate and probably good experience from the activities. The gender distribution of these lead farmers is equal around

[2] Kanyika, Benedicto; MIRACLE Project Manager, IITA. Lilongwe. Meeting 9th May 2013.
[3] Chipala, Sam; District Coordinator - Salima, We Effect. Salima. Meeting 22nd May 2013.

10 percent, although the proportion of female program members is higher than the male counterpart.

Table 1 Distribution of Participants

Cluster	Number of Households	Men	Women	Lead Farmer Men	Lead Farmer Women
Taonana	4	1	3	1	0
Mwalala	4	1	3	1	1
Jumabunguzi	3	2	1	0	0
Tisekere	3	3	0	1	0
Makande	5	2	3	0	2
Kachere	11	2	9	0	0
Siyasiya	6	0	6	0	0
Lamphasa	10	6	4	1	0
Nanyala	5	1	4	0	0
Chigodi	10	5	5	3	3
Total	**61**	**23**	**38**	**7**	**6**
Percent		37.7	62.3	11.5	9.8

Note: Percent of all farmers interviewed.

In total, 51 interviews were conducted within the MLBP. Additional interviews were completed with smallholders from the MIRACLE project in the Chitekwere EPA. All interviews from the MIRACLE project were conducted in Chigodi which was the only cluster within a reasonable distance for us to visit. The individuals that took part were selected by someone from the project. It would have been optimal to complete an equal number of interviews from both programs, but due to distance and communication issues only ten interviews could be completed from the MIRACLE project. However, we still find these interviews valuable and usable for the study in understanding the impact of the activities.

A questionnaire survey was used with questions consisting of background information about the households and perceived effects of the development program activities, see appendix for an overview of the question topics. The question form had several open questions so the farmers could answer freely and it also allowed for supplementary questions as the conversation went by. Pre-testing was done with eight interviews in order to test the questions and to see if they needed to be modified. No major changes were necessary and only smaller adjustments were made. Since the farmers do not speak English, translators were used for communication. The translators were connected to the programs in one way or another, some were program workers and others were lead farmers.

At one cluster there had been a misunderstanding between us and the man selecting the participating farmers, and a lot more farmers than needed were asked to contribute. When this became clear, the farmers got disappointed at not being able to participate. This resulted in the decision to interview all who had taken their time to be with us that day. No allowances were given to the participants and an interview took about 40 minutes on average.

3.4 Credibility of Answers

Throughout all interviews the same pattern followed. The participants were reserved and not so talkative in the beginning when we asked about the household structure and the consumption habits, but opened up and spoke more freely when the topic changed to the experiences of the programs.

When performing interviews the accuracy of answers is hard to prove. We operated in settings where there is a risk that the respondents could have been instructed to answer or behave in a specific way. With this in mind we still believe that the answers are true due to the observation of body language and how the respondents talked. Examples of this are that they were more open and voluble during questions about their experience of the program, in comparison to other topics. Most of them were very happy to talk about this and gave examples and details on how they had gained greater wellbeing. The fact that they gave their own examples of farming improvements also supports the genuineness of their stories. To use translators who have a connection to the project, or who can gain something from retelling false answers, implies a risk of receiving incorrect results. Again, our perception is not that this was the case since we find the way the farmers talked as coherent with the retold answers. Possible issues with this means of communicating, such as influence of questions and answers, were considered but the use of translators was found as necessary in this context.

Even though the answers were genuine, the result could still have been influenced by the project's interests since the interviewed farmers were chosen by the head of the farmer cluster and asked to participate in advance. We got the impression that these requests were made shortly before the interview started and it was more a matter of finding individuals that had time and dared to participate, rather than the selection of the most satisfied farmers.

4 Result and Analysis

In this chapter we present the result from the interviews, first a description of the farmers' situation and their households. The second part is a thematic section of the farmers' experiences and perceived effects from the capacity building activities. Finally, we discuss the welfare effects, human capital and economic growth that the activities bring.

4.1 Background of the Participants

4.1.1 Household Structure and Consumption

Background information about the respondents was gathered to get an overview of the households and their life situation. The mean age is 39.4 years and the average household consists of 5.9 members, ranging from 2 to 12. The households have a mean distance of 6.8 kilometers to the nearest health care and on average 2.2 kilometers to the nearest primary school. Access to primary school is good in terms of short distance but health care facilities are located farther away. In our opinion, this indicates that transport cost can be an issue which can imply less incentive to seek health care. Less severe diseases can therefore easily be ignored which can result in worse health conditions. When the situation becomes urgent and treatment is inevitable, it may be too late for help. This is obviously a negative aspect in welfare.

The major part of the interviewed lives in simple mud houses with grass roofs and a smaller part lives in houses of bricks and iron sheets but no one has electricity. Compared with Malawi in general, this is not surprising since only 8.7 percent of the population have access to electricity (The World Bank 2013b). Further, none of the participants' housing includes running water but public water pumps are often found in the villages. Poor housing with inadequate sanitation and lack of decent drinking water often have consequences such as easier transmission of diseases. This means that the farmers' housing has a negative effect on their health and welfare.

In addition to farming, 60.2 percent have income from different types of minor businesses as presented in Table 2. Of all farmers, 19.7 percent are involved in the production of something to sell at the local market, for instance baking bread, making chairs and brewing beer. Other small businesses breed and sell livestock (14.8 percent), buy and resell items (13.1 percent) or operate a bicycle taxi (3.3 percent). We believe that the increased income through minor businesses implies abilities to better control the life situation, since funds for health care and educational expenses can be greater. The theory about comparative advantages argues that everyone is better off when specializing, which would probably be valid for the Malawian farmers as well, but given the current situation it may be necessary to have this additional income in order to increase food

security. Paid labor occurs as a source of income among 3.3 percent of the farmers. As can be seen in a program document from 2006, the same figure that year was 53.4 percent (MLBP 2006, p. 34). According to the document, to engage in paid labor is a way of coping with the shortage of food, and therefore we make the conclusion that the now significantly lower number is an indicator of progress in the farmers' productivity.

Table 2 Income from Minor Businesses

Sources of Income	Number of Households	Percent
Production	12	19.7
Breeding Livestock	9	14.8
Harvest Surplus	8	13.1
Reselling Items	8	13.1
Bicycle Taxi	2	3.3
Paid Labour	2	3.3

Note: Percent of all farmers interviewed. The figures reflect multiple responses.

In order to create an understanding of the farmers' way of living, we asked questions about food intake during the last seven days and the household's general consumption over the last three months. Maize is the main part of the daily diet and can be consumed with vegetables, rarely also with meat from chicken or goat. Fish, egg, soybean, rice and sweet potato are often described by the respondents as parts of the weekly food intake. Tea, sugar and salt also occur but coffee, alcoholic beverages and tobacco products are hardly consumed at all. The latter does not have to be due to economic reasons but to religious considerations or it may be seen as a sensitive topic leading to unreliable answers. During the last three months, personal care products, school fees, school material and medical expenses are expenditures on a regular basis, less often clothing and shoes.

A clear observation in the study is the unbalanced diet, consisting mainly of maize, which probably is not nutritionally optimal. Well-being and physical strength are related to a varied food intake and the knowledge and understanding of this, together with possibilities to make these changes, are crucial to obtain a better health status. Frequent spending on health and education rather than other basic needs such as clothing and shoes indicates an interest and priority in these issues.

4.1.2 Farm Overview and Assets

Questions about the farm attributes were posed to obtain a picture of the needs, limits and possibilities in farming among the respondents. The mean farm area is 4.2 acres with a minimum of 1 acre and a maximum of 15 acres. However, the median farm area is 3 acres which provides a more accurate picture since 72.1 percent of the farmers have 4 acres or less. Cultivated crops that are common are maize, groundnuts, cotton, Irish and sweet potatoes, soya beans, tobacco, cowpeas, pigeon peas, onions, tomatoes and paprika. Maize is by far the most commonly grown main crop. All farmers have crops grown for food consumption, 13.1 percent of them sell the surplus when they can (see Table 2) and a few also have cash crops. This farm structure is representative for Malawi in general regarding both plot size and grown crops.

Table 3 Input Usage and Perceived Difficulties with Farming

	Number of	Usage of		Perceived Difficulties		
Cluster	Households	Fertilizer	Pesticides	Inputs	Climate	Other
Taonana	4	0	0	0	4	0
Mwalala	4	0	4	3	3	0
Jumabunguzi	3	3	3	2	2	0
Tisekere	3	3	1	2	2	0
Makande	5	5	3	2	5	0
Kachere	11	9	3	10	3	0
Siyasiya	6	6	1	4	4	0
Lamphasa	10	9	4	7	3	1*
Nanyala	5	5	3	5	0	0
Chigodi	10	10	2	10	1	0
Total	**61**	**50**	**24**	**45**	**27**	**1**
Percent		82.0	39.3	73.8	44.3	1.6

Note: Percent of all farmers interviewed. The figures regarding perceived difficulties reflect multiple responses. *Termites.

As can be seen in Table 3, 82.0 percent use fertilizer but only 39.3 percent use pesticides at the farm. The fertilizer usage is probably a high number compared to Malawi in general, but successful farm input subsidy programs at different time periods have created a high demand and a positive attitude among farmers towards fertilizer as a prioritized input (Mhango & Dick 2011). It would have been favorable to compare this figure with the average usage in Malawi, but this is difficult to find since all potential data bases provide information about fertilizer usage in quantities, and not the frequency of use at household level. We also believe that the high percentage of households using fertilizer is an effect of greater harvest surplus generated by the program activities, which increases the ability to purchase this input.

Types of recurrent livestock are goats, chickens, cattle, pigeons, pigs and rabbits. It varies significantly from no cattle at all up to ten or more bigger animals, but most often the household has a goat and some chickens. No livestock is primarily used for milk production but instead for meat, and none of the farmers use cattle as tools in farming. We find it as a positive welfare aspect that livestock is common among the farmers. The livestock can contribute with an additional source of food and can be seen as a safety net when other nourishment is insufficient. Further, to have a mix of crops, which is the case for most farmers, means a lower risk of total crop failure. As in all business it is good to have risk diversification and when the farmers secure output it implies a more reliable income and safer access to food.

Tools owned by the household and used at the farm are often hoes and knifes whereas instruments such as ploughs and treadle pumps are not often used. More modern techniques like tractors or irrigation systems are not present at all. We believe that these basic tools used confirm the tradition-bound methods applied. More modern practice could save time and energy which could be spent on other activities. For instance, young family members' education would then not have to be put aside in favor of domestic work and farming activities.

Around 60 percent of the households have a bicycle and the same figure goes for those who have at least one cellphone. Radio occurs in half of the households but television and newspapers do not exist at all among the farmers. Assets that can give information and contribute to communication are radios, cell phones and bicycles. These are means for farmers to mobilize and organize and can help price setting and strengthen their position.

As seen in Table 3, perceived difficulties with the farming are said to be lack of farming inputs such as fertilizer (73.8 percent) together with changing climate conditions (44.3 percent), in terms of drought and unpredicted rain season. The major part of the respondents mentioned that they would spend more money on inputs if they could.

4.1.3 Health and Educational Background

Answers about the health situation in the households were quite uniform. Almost all households have at some point sought health care, and both public and private clinics were mentioned equally. The major part of the interviewees has taken medicines and around 50 percent of the respondents have wished to seek health care but did not. This was mostly due to distance and lack of payment possibilities, but also lack of trust caused by earlier bad experience of public hospitals. A mother told us that she had visited a hospital where the doctor was intoxicated and refused to help her son, which resulted in his death. Ever since, she has no trust in public health

care and therefore do not go there anymore. A number of the people interviewed mentioned that they sought health care but were denied treatment because of a shortage of equipment and of medicine at the clinic.

The educational background in the households varies and years of schooling go from non-existing up to tertiary, even though this high level is extremely rare. The respondents have on average 5.8 years of schooling spreading from 0 to 12 years. An attempt to determine the literacy rate was made but failed due to continuous difficulties in understanding the household structures. The number of household members was given to us at the beginning of the interview, but when we asked about gender distribution and the children versus adult ratio, the total household size was never in line with the first figure.

Several reasons to why the people interviewed did not seek public health care when needed indicate that if income was higher, private clinics would probably have been chosen more often. The average year of schooling among the interviewed is quite low, but most participants grew up when primary school was not free. Our opinion is that most children in the households today go to school, but the quality and completion rate are still problematic and these issues are negatively affecting welfare.

4.2 Experiences from Capacity Building Activities

4.2.1 Farming and Cultivation Activities

The most frequently mentioned activity that the farmers have taken part in is training in conservation agriculture, as shown in Table 4, and 73.8 percent of the participating households have at some point joined this activity. Other farming activities that were brought up are cultivation and field days with 55.7 percent participating households each. Cultivation consists of training in farm maintenance, winter cropping, choosing good crop varieties, beekeeping and field days including workshops. Agroforestry and keeping livestock activities have involved 21.3 and 19.7 percent respectively.

Table 4 Participation in Capacity Building Activities

Cluster	Number of Households	Conservation Agriculture	Cultivation	Field Day	Agroforestry	Keeping Livestock
Taonana	4	4	1	2	4	3
Mwalala	4	2	3	4	3	2
Jumabunguzi	3	2	1	2	1	0
Tisekere	3	3	2	3	0	0
Makande	5	4	4	3	2	1
Kachere	11	7	3	4	0	2
Siyasiya	6	6	4	2	0	1
Lamphasa	10	9	3	5	1	2
Nanyala	5	4	3	0	1	1
Chigodi	10	4	10	9	1	0
Total	**61**	**45**	**34**	**34**	**13**	**12**
Percent		73.8	55.7	55.7	21.3	19.7

Note: Percent of all farmers interviewed. Cultivation includes farm training, winter cropping and beekeeping. Field day also includes participation in workshops.

The benefits from these activities are significant. A 49-year-old woman from the Jumabunguzi cluster told us that she had learned about conservation agriculture and explained that she now knows how to put waste from maize on the ground to cover the soil. This traps the moisture and protects it from evaporating during the dry season. She continued telling us that this new practice had given her better yield and also that this method is benefiting for the farmers in the area, since a disturbed rain pattern has become frequent as a result of climate change. Throughout the interviews, several farmers mentioned that implementation of conservation agriculture and winter cropping are ways to survive climate change. In the Makande cluster, a 25-year-old woman described how she had learned to practice agroforestry. By planting trees at the farm in order to regain nutrition in the soil, prevent erosion and cover the plants from extreme exposure to the sun, her harvest is now significantly improved. During our interviews in the Kachere cluster, a young man said that from training in keeping livestock he had learned how to manage the farm better. A previously unknown method for the farmers is to collect goat manure and put it on the field. The man had now learned about this practice and realized that it brings nutrition to the soil which increases the yield. Thanks to this, he is no longer dependent on fertilizer, he said.

After conversations with the farmers about these activities we see that the interest and demand of knowledge in new techniques are high. There is a strong will to improve the farming and to make it more effective. The proof of this is that they actually apply the ideas and dare to make changes in their traditional way of farming. It must not be forgotten that all the members participate

voluntarily which naturally explains why they are so motivated to change the situation. However, we see that the farmers' skills in keeping livestock are insufficient and we believe that the payoff from intensified activities to improve this would be significant.

4.2.2 Agroforestry Center and Service Center

Visits to the Agroforestry center was something that 75.4 percent of the responding farmers had engaged in, see Table 5. All of them said that it had been interesting and inspiring to see the innovative farming techniques. In comparison, the Service center was not that frequently visited by the farmers, only 19.7 percent had ever gone there. We even have the impression that the main part of the program participants is not even aware of its existence.

Table 5 Participation in Capacity Building Activities

		Households who Visited		
Cluster	**Number of Households**	**Agroforestry Center**	**Service Center**	**Business Training**
Taonana	4	3	0	4
Mwalala	4	4	0	4
Jumabunguzi	3	3	0	2
Tisekere	3	3	0	1
Makande	5	5	0	5
Kachere	11	8	2	4
Siyasiya	6	5	2	2
Lamphasa	10	6	7	6
Nanyala	5	5	1	3
Chigodi	10	4	0	1
Total	**61**	**46**	**12**	**32**
Percent		75.4	19.7	52.5

Note: Percent of all farmers interviewed.

A comment from the Lamphasa cluster was that they had a positive view about the Service center but thought it was situated too far away. Nevertheless, all of the 12 farmers that had visited the center lived in Khombedza EPA where it was located. We believe that the distance problem also applies for farmers living farther away in another EPA who thus would find it even less attractive to visit. An observation we did during our visit was that the center did not seem to be particularly well used. The workers there confirmed that the demand was low, especially regarding the use of Internet, printing and other computer services. During the interviews, a few argued that they were interested in reading books about farming techniques and had visited the center in order to

do so. These types of books were available at the center but greater possibilities to borrow books would be desirable, according to some participants.

Most of the farmers that had visited the Agroforestry center had applied the new practice on their own farm. Those who had not yet tried the new techniques had positive expectations about the coming season when they will be able to apply this for the first time. These high expectations were rooted in the witnessed good results from the Agroforestry center as well as from their neighbors who practice this. Many of those who had not visited the Agroforestry center told us that they would like to go when next opportunity arises, thanks to all the positive comments they had heard about it. We can see that the principle of learning by seeing works well among the farmers since they apply the new techniques after visiting the Agroforestry center. The purpose of the center has successfully been met, regarding the farmers' motivation and willingness to make changes in their farming.

We were struck by the high focus on computer services at the Service center, considering that the members were more interested in books and easier access to the center. Maybe a mobile library as a book bus could be something to consider as complement to the service center?

4.2.3 Business Training

Another experienced topic is "Farming as a Business" where the participants learn basic business skills, for instance how to estimate farming input, output and profit. As displayed in Table 5, 52.5 percent of the people interviewed have at some point taken part in this field of activities.

An example of improvements from training in business skills, given by a woman from the Makande cluster, is the knowledge of how to strategically store the harvest to sell later. The woman told us that through this knowledge she can sell her yield when the supply is smaller and therefore receive a higher price. Some of the participants said that they find it easier to bargain prices now as opposed to before the program, since they now had learned how to do this as a group. Further, a man in the Makande cluster described that an additional benefit from business awareness was better relations within the household. He said that he had learned how to do simple bookkeeping from which he and his wife had gained insight into the household economy, thus knowledge about their income and expenditures that had been absent before. This transparency in the household has resulted in a more loving relationship between him and his wife and they now have a healthier family overall, he says.

We believe that it is of great importance to have the understanding of business thinking and to be financially literate, in order to recognize input, output and profit. It is impossible to make

relevant improvements if the knowledge of shortcomings is absent. This way of thinking makes it possible for the farmers to evaluate the business and make necessary changes to develop the farm.

4.2.4 Group Savings and Loans

Something that was described during the interviews was discussions about group dynamics and organization, as how to behave in a group and what one should expect from others. This provides an understanding about the formation of and partaking in farmer clubs, in which the phenomenon of Group savings and loans (GSL) can function.

Table 6 Membership and Loans within GSL

	Number of		Non-	Loan History by Members		
Cluster	Households	Members	Members	0 Loans	1-4 Loans	≥ 5 Loans
Taonana	4	4	0	2	2	0
Mwalala	4	4	0	0	2	2
Jumabunguzi	3	3	0	0	3	0
Tisekere	3	3	0	0	0	3
Makande	5	4	1	0	4	0
Kachere	11	11	0	2	6	3
Siyasiya	6	6	0	0	6	0
Lamphasa	10	10	0	3	7	0
Nanyala	5	5	0	0	4	1
Chigodi	10	8	2	3	4	1
Total	**61**	**58**	**3**	**10**	**38**	**10**
Percent		95.1	4.9	17.2*	65.5*	17.2*

Note: Percent of all farmers interviewed. *Percent of GSL-members.

In Table 6, it is indicated that as much as 95.1 percent of the farmers belong to this type of groups. Of all these 58 members, 48 have at some point taken a loan for a wide range of expenditures, from business input to school fees or hospital transportation costs. The loans that go to inputs are both for farming and non-farming businesses. In total, fertilizer is the most commonly prioritized input to buy and examples of different non-farming inputs are sugar for baking and items to resell at the local market.

Each member has taken three loans on average and the majority, 65.5 percent, has taken between one and four loans. Almost everyone who used the loan for business got a profit from it. Those who did not gain any profit from the loans, as well as those who used it for expenditures, said that they had been able to pay it back. All who had ever taken a loan expressed their gratitude for this opportunity and declared that this access to credit had never existed before. A woman from

the Mwalala cluster expressed that "things have really changed because now I know where to go when I need help [with sudden expenses]". Another positive comment was that they gain money from the interest, coming from loans taken by group members.

We draw the conclusion that the frequency of loans within the GSL implies that it is popular and highly appreciated. From our observations we see that the purpose of the loans mostly was for productive things rather than consumption, and highly benefit the farmers. Thanks to this, the households' health and educational situation has improved, especially when the loans were used for education fees and medical expenses. The GSL also implies possibilities to invest in business, which can lead to a higher income and in the long run, economic growth can be stimulated. In addition, GSL contributes a financial safety net when access to a formal banking institution is limited.

The experience of group dynamics brings the ability to organize. This does not have to be exclusively in GSL, but also in other contexts. If entering the market as a group instead of as an individual, it is easier to get stronger influence and to obtain better positions in negotiations with policy makers. For instance, we understood from the interviews that irrigation systems that are currently absent but highly demanded, can be a question to take further. In the long term, the organizational ability can also be relevant at a higher level of development where economy of scale can be applied.

4.2.5 Informal Study Circles

The majority of the farmers told us that they had attended informal study circles and discussion groups on various topics. Commonly mentioned topics were nutrition budgeting, gender and HIV/AIDS.

The Malawian farmers live mainly on nsima, which is a dish consisting only of maize and water and is nutritionally poor. Other accessible sources of nutrition are often ignored and it seemed that there is poor knowledge about what nutrients are and what types of food are needed for better health. The topic of nutrition budgeting taught the participants about the six different food groups that exist and how to eat in a nutritious way. A 46-year-old woman from the Taonana cluster said that she has learned about these food groups and how to feed her family better. A 25-year-old man in the Tisekere cluster told us that he now changes his food habits in order to have a more diversified diet, and that he and his wife are now less often sick.

We can conclude from the questions about food consumption that diet changes have occurred in some places and not in others, in comparison to when the program started (MLBP 2006). This

can perhaps be derived from disparities in income improvements or how attached the household is to traditional habits.

Discussions on subjects such as gender and HIV/AIDS were said occasionally to take place and increased dialogue within the household and more dynamic responsibilities were results of these meetings. Moral behavior and prevention of HIV/AIDS were important focal points within these topics. Regarding gender, a 25-year-old woman in the Makande cluster declared that "Women are recognized now, we see our potential and become richer. We can support our families better now. We can do anything."

Adult literacy classes were also given by the programs and several examples were given about household members that had learned how to read and write thanks to these classes. They were thankful for this opportunity and wanted to spread the skills to other members in the household. We believe it is of great advantage for children to have parents who are literate, since they can provide support for their children when they learn how to read and write. Literate parents can be essential contributors when a society wants to break the illiteracy circle.

4.2.6 Knowledge Sharing and Spillover Effects

The programs we have been in contact with use the method of training for certain individuals who are responsible for sharing the knowledge to other members. These so called lead farmers are chosen by their farmer clubs and entrusted to spread new information to their group. The lead farmers who we got to talk to seem to have some common characteristics: they are genuinely interested in farming and new techniques; they take their leadership seriously and are inspiring and talkative. From this we got the impression that they actually do share the knowledge and new skills, and since all farmers interviewed do have experiences from different activities, the knowledge sharing within the programs seems to work well. Many examples of the farmers' conviction of the increased utility from the new practice are based on learning by seeing. Not surprisingly, this type of knowledge sharing is preferable in this context.

We wanted to know if the activities have spillover effects outside the programs and therefore we asked if the farmers had spread their knowledge and told others about their experiences. Almost all answered that they had done so and offered examples of how they had taught and inspired others. A 67-year-old man from the Lamphasa cluster told us that he applies the techniques he learns from the program at his own farm, and that other farmers usually go there to observe the new methods. Many women also explained that they have started to discuss more, regarding both problems and new ideas. After the meetings within the program, the current topic is discussed

further with both members and non-members. A 40-year-old woman from the Taonana cluster told us that her lifestyle has changed since she now discusses more with others and constantly learns new things. We see from this that the programs have some spillover effects throughout their target areas.

4.3 Welfare Effects, Human Capital and Economic Growth

We wanted to know if these program efforts had changed the households' health situation and if so, in what way. The overall response was that they experienced a better health now compared with before the programs started. They indicated that the better situation was a result of better harvest coming from the new skills and techniques that they could now apply. A small number of farmers that had been involved for only a couple of months had not seen any change in their health situation.

The farming activities have led to an increased yield and in some cases even a surplus for the farmers. This has contributed to more and better food for the household, and also possibilities to pay for health care and to trade the grown crops for a more diverse food consumption. In some households there have also been improvements in the awareness about nutrients and nutrition budgeting that has contributed to more diversified diets and thus health improvements. Further, GSL has a significant role in providing access to health care, both through payments in medicines and transportation. Not only is the physiological health improved, we also consider psychological progress as less anxiety is reported. Through GSL, as well as through an increased yield, the farmers experience security improvements in terms of better access to both food and health care. Another psychological health aspect is the feeling of empowerment that a woman described.

Regarding changes in the educational situation, we asked the participants to describe their views about this. Overall, the specific skills in farming techniques that the farmers have learned are visible and said to be of great benefit for them and future generations. Those who have participated in adult literacy classes have obviously gained educational improvement in reading and writing. Further, those who have gained a surplus in their farming often said that it was used for payments of school fees and material for their children. In the households where the adults had completed primary school and the children were not yet in school, no effects in education were perceived. A 42-year-old man from the Jumabunguzi cluster shared his thoughts about what impact the activities had had on his children; "they now get enough food to fill their stomachs which enables them to think more clearly and they can therefore do better in school". According to a 27-year-old woman in the Mwalala cluster, her children benefit educationally in three ways:

firstly she is now able to pay their school fees, secondly she can give them breakfast before they go to school and thirdly they have a greater interest and will to learn.

We find the general result from the interviews that the participants have gained a better situation regarding health and education, which corresponds to greater human capital. An example illustrating this, told by a 25-year-old woman from the Makande cluster, is the ability to afford paid labor, coming from the new harvest surplus. This results in saved energy and increased productivity when she actually is working. Furthermore, productivity will increase since the farmers manage to work more efficiently due to better health. There will also be fewer days when the farmer is not able to work because of sickness or taking care of family members. A healthier population will further imply that more people can join the labor force and stimulate economic growth.

The different capacity building activities have led to improvements in farming skills, thus specific human capital is gained, which leads to higher output. An example is when a farmer has learned how to manage his livestock efficiently and therefore increased his profit. The activities have indirectly contributed to more formal education for the participants' children due to better prerequisites to education, as well as through better health that benefits educational outcome. Formal education in school as well as informal adult literacy classes contribute to higher general human capital. These improvements can in the future pay off in terms of both higher private and social returns. Higher wages symbolize the private return and the positive externalities that a more educated population can bring will benefit the society as a whole.

Looking at a longer time perspective, a possible effect is that the educational outcome will be higher, when life expectancy rises, increasing incentives for educational investments. According to the literature, parents with formal education tend to enroll their children to a greater extent and children tend to get more education than their parents. Also, better educated mothers tend to have healthier children and hopefully all these aspects will take place among these farmers. The increase in human capital will, according to endogenous growth theories, lead to economic growth for the region. Since such a large share of the population is active in the agricultural sector, development in this area will lead to significant growth for the economy as a whole.

5 Conclusion

The aim of this study was to investigate how capacity building activities for smallholders can contribute to development among the poorest. We wanted to find out what welfare effects, in terms of health and education, smallholders in Malawi can achieve through capacity building activities, and what long-term effects in economic growth can be reached through capacity building activities for smallholders in poor areas.

In order to answer these questions we conducted a minor field study in Malawi where interviews and observations took place. A quantitative method was first considered, but due to time limits and lack of resources, abandoned in favor of a qualitative approach. The strength in using a qualitative method is the in-depth understanding of the effects of capacity building that we reach through personal interaction. A weakness in the method is the problem with credibility, hence the risk of receiving answers influenced by program operators' interests. However, our opinion is that this was not the case.

We have through interviews and observations found evidence that capacity building activities among smallholders can result in higher welfare through a better health and educational situation. Examples of activities observed are training in new cultivation and live-stocking techniques, agroforestry, conservation agriculture and business training. Altogether, these new methods have led to better harvests, more food and higher income, the latter often spent on school fees and medical care. The techniques also provide better opportunities to cope with current and future climate changes, which make the farming sustainable. Nevertheless, an area that would benefit from further training is livestock keeping, and a more customized service center may also be favorable. By looking at the result we can conclude that the activities have spillover effects outside the program thanks to the transfer of knowledge from the participating farmers.

The farmers become more productive when they are healthier and more educated, according to the theory about human capital. The relationship between health and education is two-way; better health leads to more education and more education leads to better health. In the long term, the gained human capital will most likely stimulate economic growth, as the endogenous growth theories state. We believe that the impact can be significant since the agricultural sector involves as much as 85 percent of the Malawian population (FAO 2013). Due to this, we consider efforts to make the farmers more productive as highly relevant, which should be of interest to regional policymakers. As agriculture is the major sector in many of the world's low developed countries, the study and its result are therefore also relevant for numerous policymakers and aid donors

worldwide. The findings can probably be valid for other poor countries in areas in similar context and where same conditions exist.

This paper gives a deeper understanding of how capacity building for smallholders can influence the farmers' life situation. This is thanks to conversations with the farmers themselves where they have been given the opportunity to share their perceived experiences and thoughts about the activities. After having performed this study we are curious to know more about ways to increase agricultural productivity. Our experience from Malawi is that infrastructure and public institutions are weakly performing sectors that interact with farming. Possible improvements in these areas and their impact on economic growth could be interesting subjects for further research.

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7 Appendix

An overview over question topics in the interviews, discussed with all participants.

Background questions

- Household background
- Farm structure and activities
- Household consumption
- Health status and educational level

Questions about capacity building activities

- Agriculture activities
- Agroforestry center and service center
- Business training
- Group savings and loans
- Study circles
- Knowledge sharing

Questions about perceived effects in

- Health
- Education

The topics above were studied in different perspectives and the capacity building activities were analyzed in aspects of participation, attitudes and results. Open questions regarding effects in health and education were posed and the participants shared the perceived changes derived from their experiences.